

Application No. 09/929,703

REMARKS

Accompanying this Response is a Request for Continued Examination (RCE), and therefore, entry of this Amendment is proper.

Favorable reconsideration and allowance of the subject application are respectfully requested. Claims 1-3, 5, 7, 10, 13-14, and 16-33 are pending in the present application, with claims 1, 13, 16, and 33 being independent.

New independent claim 33 is added to provide more varied protection for the present invention and to raise a new issue for the Examiner's consideration, and thus, preclude a first-Action final rejection after the filing of the RCE. The combination of features recited in claim 33 has not been presented earlier. No new matter is added.

Applicant Initiated Interview Request

Applicants' representative respectfully requests a personal interview with the Examiner in the above mentioned application, prior to the first Office Action after the filing of a Request for Continued Examination (filed concurrently herewith) in accordance with M.P.E.P. § 713.01(III) and § 713.02.

The Examiner kindly is requested to contact the undersigned attorney at the local telephone number listed below to arrange for the personal interview at the Examiner's earliest convenience.

Claim Rejections under 35 U.S.C. §103

The Examiner rejected claims 1-3, 5, 16-19, 21, 22, 24, 25, 27-30, and 32 under 35 U.S.C. §103(a) as being unpatentable over Nikula et al (US 7031334) in view of

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Dent (US 5377183). Claims 7 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of J.P. Fonseka (IEEE ELECTRONICS LETTRS 2nd September 1999 Vol. 35 No. 18). Claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al, and Dent, and further in view of Fujiwara (US 4794649). Claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of Kim et al (US 6493333). Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al, Dent, and Fujiwara, and further in view of Ricci et al (US 6463039). Claim 31 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of Ricci et al. Claim 26 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of Landolsi (US 6570842). These rejections are respectfully traversed insofar as they pertain to the presently pending claims.

With respect to the rejection of claims 1-3, 5, 16-19, 21, 22, 24, 25, 27-30, and 32 under 35 U.S.C. §103(a) as being unpatentable over Nikula in view of Dent, Applicants respectfully traverse this rejection, for at least the following reasons, insofar as it pertains to the presently pending claims.

In the "Response to Arguments" of the outstanding Office Action, the Examiner acknowledged that "Nikula is silent about the modulation technique employed is an amplitude modulation technique." However, the Examiner stated that:

The examiner strongly believes that one of ordinary skill in the art would recognize that instead of differing phase modulation levels (e.g. BPSK for the signaling information and 8-PSK for the data portion) differing amplitude modulation levels could be utilized (amplitude

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modulation techniques are known in the art) to be assigned to signaling information (for example 4QAM) and data/user information (for example 8-QAM or 64-QAM) since as Dent discloses employing the amplitude modulation techniques such as QAM to modulate the signaling information and the data/user information is known in the art (Col. 10, lines 2024 and 43-55) and it is beneficial because employing amplitude modulation techniques has the advantage of robustness to noise because QAM modulation scheme is in fact the addition of amplitude modulation to multi-level PSK modulation scheme wherein the signaling information and data/user information are encoded into variations of amplitude. Therefore, the examiner disagrees with the applicant that the combination of Nikula and Dent does teach the claimed limitation(s).

See Office Action at page 3; emphasis added; see also page 5.

First, Applicants respectfully reiterate that the Examiner has not cited any support for the assertion that it would have been obvious "to modulate different symbols conveying information as taught by Dent in order to take advantage of their robustness to noise" (emphasis added). Applicants respectfully submit that the Examiner's belief alone, without any support, is insufficient to establish a *prima facie* case of obviousness. The Federal Circuit has made clear that such a conclusory statement made by the Examiner is not a proper basis to substantiate an obviousness rejection.

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness". See *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006) (cited with approval in *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (April 30, 2007)).

As mentioned above, the Examiner has not cited any support in Nikula or Dent for the alleged motivation to modify Nikula in view of Dent. Moreover, neither Nikula

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nor Dent provides such a motivation to combine these references in the manner alleged.

Thus, Applicants respectfully submit that the Examiner's stated motivation to combine the teachings of Nikula and Dent merely is an unsupported conclusory statement, and thus, fails to properly establish a *prima facie* case of obviousness.

Second, notwithstanding the above, Applicants respectfully submit that it would not have been obvious to combine Nikula and Dent to arrive at the claimed invention.

Nikula discloses taking advantage of the phase rotation characteristics associated with the different modulation methods by using the rotation of the constellation points in the phase space as an indication of the transmission burst contents. Each transmission burst contains a training sequence the symbol content of which is known, so a receiver can use the received form of the training sequence to find out a correct phase de-rotation angle. Associating a certain unique phase rotation angle to each modulation method is thus a feasible way of conveying a piece of simple modulation-related information (see col. 3, lines 2-12; emphasis added).

Thus, Nikula clearly is explicit about the modulation technique. That is, Nikula clearly discloses associating a certain unique phase rotation angle to each modulation method. Moreover, in the outstanding Office Action, the Examiner acknowledged that Nikula fails to disclose amplitude modulation as an indication of the transmission burst contents.

In view of the above, Applicants respectfully submit that, since Nikula already discloses "using the rotation of the constellation points in the phase space as an

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indication of the transmission burst contents," there clearly is no reasonable motivation to modify Nikula to indicate the transmission burst contents in another way. For at least this reason, Applicants respectfully submit that the outstanding rejection fails to establish a reasonable motivation for modifying Nikula based on Dent.

Moreover, the teachings of Dent clearly fail to provide any motivation for modifying Nikula in the manner alleged. In the outstanding rejection, the Examiner relies on col. 10, lines 20-24 and 43-55, of Dent merely for the teaching of "employing the amplitude modulation techniques, such as QAM to modulate the signaling information and the data/user information." Emphasis added. That is, the outstanding rejection appears to take the position that, merely based on the existence of amplitude modulation in Dent, it would have been obvious to modify Nikula to use amplitude modulation. However, as the Examiner knows, merely citing a reference that teaches that amplitude modulation, in general, is known in the art is not sufficient to establish that the specific combination of features recited in the claims would have been obvious.

Applicants respectfully submit that a statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000) (Court reversed obviousness rejection involving

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technologically simple concept because there was no finding as to the principle or specific understanding within the knowledge of a skilled artisan that would have motivated the skilled artisan to make the claimed invention). See M.P.E.P. § 2143.01. Accordingly, Applicants respectfully submit that the alleged combination of Nikula and Dent is not sufficient to render the claims *prima facie* obvious.

Third, even assuming in *arguendo* that a reasonable motivation could be established for the alleged combination, Applicants respectfully submit that Dent clearly fails to make up for the deficiencies of Nikula. In contrast to the claimed invention, Applicants respectfully submit that Dent clearly does not disclose or even mention using amplitude modulation to identify the type of the conveyed data, as recited in claim 1. Instead, Dent merely discloses modulating a composite signal obtained by adding the calling channel signal and the traffic signal.

Specifically, Dent discloses a method for transmitting control information and user traffic signals from a first base station to a plurality of mobile stations in a Code Division Multiple Access (CDMA) system including:

"coding control information using a spread spectrum code unique to control information to form a calling channel signal;
coding each user traffic signal using a spread spectrum code unique to each traffic signal;
adding said calling channel signal and said coded traffic signal using predetermined weighting factors to obtain a composite signal;
modulating said composite signal on a radio frequency carrier to form a radio frequency signal; ..."

See Dent at col. 10, lines 6-17; emphasis added.

That is, Dent merely discloses using spread spectrum coding that is unique to the control information to form a calling channel signal and spread spectrum coding that

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is unique to the user traffic signals. A composite signal is obtained by adding the calling channel signal and the traffic signal. Dent clearly discloses that the modulation is only performed on the composite signal. That is, in Dent, a single modulation technique is used for the composite signal. Accordingly, in Dent, the modulation has nothing to do with the type of the signal.

Thus, even assuming in *arguendo* that Nikula and Dent could be combined in the manner alleged by the Examiner, the combination clearly would not suggest modifying Nikula such that different modulation indices are used to identify a type of the conveyed data based on an amplitude of the amplitude modulation index, as recited in independent claim 1. Instead, Dent would suggest (at best) using spread spectrum coding that is unique to each type of data.

In comparison, independent claim 1 recites a method for transmitting a plurality of information symbols between a first transceiver and a second transceiver by modulating a carrier signal. Claim 1 recites that:

a different modulation index is assigned to each one of the information symbols, the information symbols conveying data, and the modulation indices identifying a type of the conveyed data based on an amplitude of the amplitude modulation index,

at least one characteristic physical variable of the carrier signal is modulated in accordance with the different modulation indices assigned respectively to the information symbols that are modulated onto the carrier signal to produce a modulated signal, and

the modulated signal is transmitted from the first transceiver to the second transceiver, and the second transceiver evaluates the modulated signal to obtain the conveyed data.

(Emphasis added.)

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Applicants respectfully submit that the combination of Nikula and Dent, as alleged by the Examiner, clearly fails to disclose or suggest at least these features, as recited in claim 1.

Fourth, Applicants note that, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). See M.P.E.P. § 2143.01.

As set forth above, Nikula explicitly discloses associating a certain unique phase rotation angle to each modulation method. Nikula was specifically designed to operate by associating a certain unique phase rotation angle to each modulation method, not based on amplitude modulation. Accordingly, the stated combination of Nikula and Dent would require a substantial reconstruction and redesign of the elements shown in Nikula as well as a change in the basic principle under which Nikula's construction was designed to operate. Accordingly, Applicants respectfully submit that the alleged combination of Nikula and Dent is not sufficient to render the claims *prima facie* obvious.

For at least the foregoing reasons, the alleged combination of Nikula and Dent fails to teach at least, *"a different modulation index is assigned to each one of the information symbols, the information symbols conveying data, and the modulation indices identifying a type of the conveyed data based on an amplitude of the amplitude*

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modulation index," as recited in independent claim 1 (emphasis added); and "wherein said modulation indices respectively assigned to said information symbols identify said information items based on an amplitude of each of said modulation indices," as recited in independent claim 16 (emphasis added).

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection. Independent claim 16 recites, in this respect, related subject matter to claim 1, and is at least allowable for similar reasons provided above in the arguments for the allowability of claim 1.

Dependent claims 2, 3, 5, and 17-19 also are allowable over the combination of Nikula and Dent by virtue of their dependency from claims 1 and 16, respectively, as well as for the additional features recited therein.

Claims 7 and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of J.P. Fonseka (IEEE ELECTRONICS LETTERS 2nd September 1999 Vol. 35 No. 18). This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

Dependent claims 7 and 20 should be considered allowable at least for depending from an allowable base claim. Applicants submit that the reference cited above in support of the rejection of the dependent claims, as applied, fails to cure the deficiencies of Nikula and Dent as applied in the independent claims. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

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Claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al, and Dent, and further in view of Fujiwara (US 4794649). This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

Dependent claim 10 should be considered allowable at least for depending from an allowable base claim. Applicants submit that the reference cited above in support of the rejection of the dependent claim, as applied, fails to cure the deficiencies of Nikula and Dent as applied in the independent claims. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Independent claim 13 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of Kim et al (US 6493333). This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

Independent claim 13 recites, in this respect, related subject matter to claim 1, and is at least allowable for similar reasons provided above in the arguments for the allowability of claim 1. Applicants further submit that Kim, as applied by the Examiner, fails to cure the deficiencies of Nikula and Dent, as set forth above with respect to claim 1. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al, Dent, and Fujiwara, and further in view of Ricci et al (US 6463039). This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

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Dependent claim 14 should be considered allowable at least for depending from an allowable base claim. Applicants submit that the references cited above in support of the rejection of the dependent claim, as applied, fail to cure the deficiencies of Nikula and Dent as applied in the independent claims. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Claim 31 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of Ricci et al. This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

Dependent claim 31 should be considered allowable at least for depending from an allowable base claim. Applicants submit that the reference cited above in support of the rejection of the dependent claim, as applied, fails to cure the deficiencies of Nikula and Dent as applied in the independent claims. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

Claim 26 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nikula et al and Dent, and further in view of Landolsi (US 6570842). This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

Dependent claim 26 should be considered allowable at least for depending from an allowable base claim. Applicants submit that the reference cited above in support of the rejection of the dependent claim, as applied, fails to cure the deficiencies of Nikula and Dent as applied in the independent claims. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

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CONCLUSION

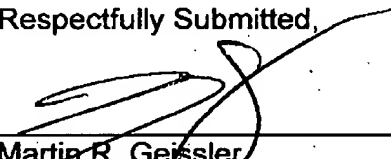
Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Martin R. Geissler, Applicants' Attorney at 1.703.621.7140 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3828 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully Submitted,



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